

**CONSUMERS UNION'S COMMENTS ON THE CALIFORNIA POWER AUTHORITY
TARGET RESERVES LEVEL RULEMAKING
Rulemaking No. 2002-07-01**

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September 4, 2002

SEP 05 RECD

CONCLUSIONS

Consumers Union commends the Authority's initiative in undertaking this important coordinated process. The process may be more important than the result.

The Authority can stay with tradition. Plan for a one-day outage every ten years, with reserves of 15-22 percent.

FERC seems to like a minimum of 12 percent.

But, maybe there are some new considerations to take into account:

- the power system is deconstructed, reliability more complex,
- competitive markets provide disincentives for reserve investments,
- reserves planning must mesh with the FERC SMD and ISO MD02,
- reliability is usually affected more by transmission and distribution,
- planning must include all the interconnected western states,
- planning must consider regional constraints within the State,
- economic reserves are needed to prevent market power, 30-40%?
- the uncertain State retail market design means:
 - ♦ utility load responsibilities are unclear,
 - ♦ direct access users may choose their own reserve levels,
 - ♦ competitive energy service providers have different loads.
- reserves need to include effective demand response programs.

Consumers Union commends the Authority's Demand Response Program and Renewables in a Clean Reserves Portfolio initiatives.

Residential and small business consumers should remain as bundled ratepayers of the utilities, with forward contracting for 15 percent reserves. Large users and direct access customers should pay for the additions to achieve the 22 to 40 percent levels needed for competitive wholesale market reliability and economic functioning.

A. POWER EMERGENCY HISTORY

The recent history of power emergencies in California shows the Power Authority has undertaken a complex task to establish target reserve levels.

July 9 and 10, 2002	ISO Stage 1 and 2 emergencies, more than a year after the energy crisis, due to inadequate generation for a west-wide heat wave , imports declined and loads were shed, forced outages at 2200Mw, help came from 1500Mw of emergency capacity from the Southwest .
September 3, 2002	Tuesday, this week, the ISO showed 6600Mw of forced outages with Diablo Canyon Unit 1, Delta and Huntington Beach units down; lucky no heat wave.
June 18, 2002	A fire under the Midway-Vincent Path 26 transmission line creates the need for voluntary load reductions in Southern California.
January-May 2001	Seven rotating blackouts in California during non-peak demand months, from 1-6 hours in length, curtailing 101-1000Mw of firm power, due to inadequate generation , with major plant outages for maintenance and possibly due to market manipulation .
June 14, 2000	Rotating blackouts in South San Francisco Bay Area due to regional transmission constraints .

Prior to the 2001 blackouts, the major episodes of rolling blackouts in California were due to **interstate transmission failures**.

On Lake Avenue in Piedmont this year, there have been three outages that required the resetting of all the digital electronics. The short outages were due to **distribution system failures**.

A few lessons from this history are:

1. Transmission and distribution are important for reliability.
2. Other western states are important, for imports and emergency help.
3. Forced outages are random and difficult to consider in plans.
4. Before AB1890, generation adequacy under integrated utilities was not a problem. The AB1890 market and FERC-regulated competitive wholesale market created incentives for withholding power and for inadequate generation.

B. SETTING RESERVE LEVELS-STATE LEADERSHIP AND COORDINATION NEEDED.

Consumers Union is **very pleased to see this effort taking place** to determine target electricity reserve levels to provide California electricity consumers with power reliability and reasonably stable prices. We commend the Power Authority for coordinating actively with the other

responsible agencies, because California needs an integrated and coordinated planning target to guide many agency activities, including:

- the CalISO's market design and proposals to FERC,
- the utilities' procurement plans,
- the CPUC's procurement rules,
- the CEC's power plant siting processes,
- and the CPUC, CEC and CPA actions to develop demand responsiveness programs and demand-side management programs.

The California energy crisis in 2000-2001 and the rate hikes in San Diego showed all observers that market price signals are not the way to show that peak demand generating capacity is in short supply. AB1890 of 1996 and FERC had left reliability up to the market. For electricity, that policy has now been discredited.

C. OTHER IMPORTANT ACTORS

While it is difficult enough to coordinate the State energy agencies and market participants, the Power Authority needs to consult and work with at least three additional organizations: FERC, WECC States, and APCDs.

1. FERC

Standard Market Design (SMD)

The Federal Energy Regulatory Commission is giving close attention to long-term resource adequacy in its thoughtful *Notice of Proposed Rulemaking Remedying Undue Discrimination through Open Access Transmission Service and Standard Electricity Market Design* (Docket RM01-12-000, Sections J and K, paragraphs 457-555, July 31, 2002) It would be constructive if the California energy agencies could make a reasoned and coherent response to this FERC proposal. FERC's document recognizes that:

- spot market prices are a poor way to provide incentives for investments in resources for reliability,
- energy service providers receiving market prices have an incentive to create shortages and attendant high prices.
- and competitive load serving entities (LSEs) have an incentive to underinvest in reliability.

FERC's proposal to assure resource adequacy, in summary, is:

- the Independent Transmission Provider (ITP) forecasts regional demand,
- FERC sets a minimum reserve capacity requirement, with **12 percent** proposed,

- the ITP, with help from a Regional State Advisory Committee, sets a regional requirement for load serving entities, with specified planning horizon and locational factors; the reserves target could be more than 12 percent.
- FERC and the ITP will enforce the LSE resource adequacy requirement.
- load serving entities with inadequate reserves will be financially penalized and deprived of power during shortages.

FERC strongly recommends that resource adequacy be addressed on a regional, consistent basis, so that LSE's in one state do not underinvest and have lower costs than LSEs in other states with higher standards.

Market Design 2002 (MD02)

FERC was more specific about California in its *Order on the California Comprehensive Market Redesign Proposal*, issued July 17, 2002 (Docket ER02-1656-000) FERC notes that the California wholesale electricity market is **still dysfunctional** and urges California officials to act aggressively to improve the generation, transmission and demand response infrastructure (p.2).

FERC directed the CalISO to refine what mechanism should be used to assure generation adequacy. FERC worries that the continued market mitigation they impose will provide inadequate incentives for investment in new infrastructure (p.42) FERC noted that the CalISO could not implement its proposed Available Capacity Obligation (ACAP) until 2004 and ordered expedited technical conferences to develop a proposal, because "a resource adequacy proposal is fundamental to any workable market design." (p.42) The Standard Market Design proposal should guide what the CalISO proposes for resource adequacy measures in the future.

FERC is developing a regulatory framework with market rules and market power mitigation measures, but when it comes to investing and developing the needed infrastructure, FERC concludes that "...only California can make it happen." (p.55)

The FERC/CalISO focus for responsibility for providing reserves is load serving entities. The LSEs should assure resources through long-term bilateral contracts. FERC recommends that LSE's should cover at least 70 percent of long term energy needs during peak periods from long-term contracts. (p.21)

2. Other Western States

Planning for adequate generation and transmission capacity should be a regional undertaking since California relies on imports for about one-fifth of our electrical energy, the western states are interconnected, generation and demand are growing in nearby states, and merchant generators can export power from California in the wholesale market. The Power Authority should consult the other Western Electricity Coordinating Council (WECC) states in establishing targets.

Some conclusions from FERC's July 17, 2002 staff presentation on *Western Market and Infrastructure Assessment* (Docket no. AD02-20-000) makes many relevant conclusions for this Power Authority effort:

- states bordering California are showing high population growth and increases in electric sales,
- downgraded credit ratings are affecting infrastructure expansions,
- thinner profit margins and uncertainty affect investment plans,
- WECC reserve margins are the lowest in the nation, about 10%,
- Arizona and New Mexico show an operating reserve margin of -3%,
- WECC transmission constraints hurt reliability and increase prices,
- interstate gas pipelines are being used close to peak levels.

California's electricity system is not an island.

3. Environmental Agencies

Environmental protection agencies, especially regional air pollution control districts (APCDs), are affecting the economics and reliability of generation. FERC points to a planned 1500Mw of retirements as a cause for concern, especially since older and dirtier plants are in urban areas and play a role in load balancing. Since planning for reliability must deal with such incentives and constraints, this effort should incorporate these agencies in the planning effort.

D. CONSIDERATIONS IN ESTABLISHING RESERVE TARGETS

The CPA staff paper "Reserves-A Starting Point for Discussion" issued August 28, 2002 and the Energy Commission's section on reserves in its recent *2002-2012 Electricity Outlook Report* touch on many complex considerations that need to be taken into account in establishing reserve targets. Consumers Union highlights some of these and adds some more, in the happy recognition that we do not have to do the work.

1. Why Reserves?

a. Reliability, Operating Reserves.

FERC, the ISO, the CEC, and the CPA staff all conclude adequate reliability requires operating reserves of about 7 percent in real time.

b. Reliability, Planning Reserves

The old utility planning reserves rule-of-thumb has been 15 percent.

This may now need to be **higher** in competitive wholesale markets because:

- hundreds of QFs and merchant generators have replaced integrated utility power provision,
- maintenance is less well coordinated,
- merchant generators may have perverse incentives to withhold power
- merchant generators can export power out-of-state,
- old plants are less reliable,
- emissions limits by APCDs can restrict summer generation hours.

The Energy Commission's Outlook report shows that the reliability computer modeling is much more complex and the risks factors more numerous in the unintegrated competitive wholesale market.

c. Economic Reserves for Workably Competitive Wholesale Markets

A **new economic role for reserves** has emerged from the dysfunctional California AB1890 market and from FERC's Standard Market Design rulemaking. The role is to provide enough "extra" supplies so buyers have many choices and **suppliers cannot exert market power**, especially at times of peak demands. Power Authority staff suggest 22 percent reserves may be needed to provide a well-oiled market. The Energy Commission's Outlook report points out a functioning market may need 30-40 percent reserves (p.II-3-12). Mark Cooper of the Consumer Federation of American has suggested 40 percent may be needed. But none of these estimates are based on detailed analysis.

The need for economic reserves depends on the market structure and the interplay of market participants. If load serving entities acquire all needs through bilateral contracts with suppliers, economic reserve needs would be less than if all buyers use a spot market.

2. What Measure of Reserves?

The Power Authority materials refer to percentage reserves. The measure of risk that reflects risk analysis is **loss of load probabilities**. In the past, these LOLP analyses were derived from failure scenarios, for example, providing enough reserves to meet demand for a contingency when the two largest power units went down, unplanned, plus a major transmission line. The Energy Commission's Outlook report states,

Industry standards have historically set reserve margins so that the inability to meet peak demand be no greater than one day in ten years. This reliability performance target has required planning reserves of about 15-22 percent, depending on the nature of demand and the mix of capacity resources in a control area. (p.II-2-6)

The Energy Commission's Outlook report presents a more complex risk assessment involving the modeling of a range of demand and supply scenarios. For example, supply risks that are modeled include: low hydropower availability, new plant construction delays, and increased

forced generation outages and transmission outages due to aging infrastructure. The report shows a high level of uncertainty, with forecasted available generation for the year 2003 ranging from 43,000Mw to 52,000Mw in-state, and imports at 5,000Mw to 15,000Mw. The peak demand forecasts range from 50,000Mw to a one-in-forty chance high demand of 62,000Mw. (Chapter II, pp.3-2,3)

The Energy Commission report does not seem to come to grips with setting detailed reserve needs, because the reserve margin baseline forecasts of reserve margins for 2002-2012 are 19-23% in the ISO control area and 29-35% in the western states (p.II-2-5). Even the lowest scenario shows western states reserve margins of about 35 percent in 2003 and 2004, mainly due to new power plant construction in other western states. Such margins look comfortable, for both reliability and economic purposes. But uncertainties abound.

3. Reserves for Whom? Consumer Choice Sets Targets? Who Pays?

The design of the retail electricity market in California is still uncertain. The CPUC may un-suspend direct access next year, so ratepayers may select non-utility load serving entities who may deal with merchant energy service providers. Some users and user groups are highly risk averse to blackouts due to the high cost and inconvenience of power interruptions. Other large users have invested in instantaneous backup generators and do not want to pay for added supplier reserves.

With retail choice reinstated, and with new community aggregations, groups of consumers may choose energy service providers with different levels of reserves and reliability. Those wishing or needing high reliability would pay higher rates. Consumer choice and the market would determine reserve targets, based on consumers willingness to pay with different energy service providers, rather than a government agency making such an economic and social decision.

Consumers Union has advocated that small users continue as bundled utility customers and obtain high levels of reliability through substantial forward contracting. Parties in the CPUC's energy procurement proceeding have asked the CPUC to determine the risk aversion profile of ratepayers so appropriate reserve margins can be incorporated into the utilities' procurement plans. But the record is sparse on the subject and the utilities seem to have included the traditional 15 percent reserve margins in their plans.

The retail market design uncertainty affects reserve targets. If a load serving entity has uncertain load and customers can leave or return at will, a larger reserve is needed to cover high demand contingencies, and contracts must be shorter. If loads are stable and predictable, reserves can be better matched to demand and power contracts can be longer. In general, longer contracts should provide lower costs.

If utilities have an obligation to serve and are the default provider for all retail power buyers, the utilities will need larger reserves to accommodate direct access customers who may return to bundled utility service. Non-utility load serving entities could deliberately underinvest in reserves, with lower costs, knowing they can dump contingency reserve costs on the utilities. So

the target reserves for utilities will depend on the groundrules for direct access and for serving as provider-of-last-resort.

4. What kind of reserves?

The composition of the reserves should include at least generation, demand-side management programs, and transmission capacity. Consumers Union hopes that the Power Authority can develop the concept of "firm-green" power, especially coupling renewable resources with demand-side management programs, to meet peak demand and reserve needs. We commend the Authority for the Clean Growth Strategy in its investment plan and for the initiatives with the Demand Reserve Partnership.

5. Reserves Where? Scope.

The Power Authority, with the other agencies and market participants, needs to help establish planning reserve targets for the western states and statewide California. But the power emergency history and recent reports show regional and local needs for generation/demand-side-management and transmission capacity improvements. The Power Authority's Investment Plan shows special needs in the San Francisco-San Jose area. The Energy Commission's Outlook report cites a generation and transmission need in Southern California of 5200Mw and in San Diego of 3500Mw (p.II-3-8), while the ISO has identified many areas with transmission congestion, from Humboldt to Fresno to San Diego.

The FERC Standard Market Design proposed approach is to provide an incentive for transmission users to invest in more capacity when transmission congestion charges become high on specific routes. The ISO will administer a system of transmission congestion rights and revenues. But such price signals may or may not encourage the investments in transmission infrastructure to occur. There is a strong role for agency planning to promote reliability and functioning markets.

Since a useful role for the Power Authority is to make investments happen in problem areas, the reserves targets will need to be at least at the regional level, as well as over the western states.

6. Who Invests?

This rulemaking is to establish reserve targets, not to determine who should make infrastructure investments and who should pay for them. But Consumers Union cannot refrain from the observation that it would be best for "core" small users to be bundled customers of the utilities, who obtain, through bilateral contracts, the industry standard 15 percent planning reserves. Large users and direct access customers should then pay for the increased reserves to provide the 22 percent or 30 percent or 40 percent reserves needed for reliability and preventing market power in the world of Standard Market Design and Transmission Congestion Rights.